

turnover. This may occur by removal of collagenase inhibitors or by promotion of the activity of collagenase present in the scar tissue.

Recently, the use of the neodymium-yttrium-aluminum-garnet laser has been explored in the treatment of keloid, and early clinical results are promising. The mechanism of action of laser irradiation to reduce keloid scarring appears to be associated with fibroblast inhibition. The influence of the laser on the integrity of fibrillar collagen also must not be discounted and is the subject of ongoing investigation.

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Immediate Breast Reconstruction

IMMEDIATE RECONSTRUCTION of the breast, done during the same operation as the ablative procedure, is being practiced more and more frequently. There are several factors responsible for this increase. Previously it was thought that immediate reconstruction might adversely affect the course of the disease following ablation. This concern now appears to be unwarranted. It was previously postulated that patients needed to have a period of mourning for the loss of a breast before reconstruction was attempted. This was based on the idea that acceptance of the reconstructed breast would be easier if a patient first went through this period of mourning. With the newer techniques now available, this is no longer necessary. Immediate reconstruction also eliminates the cost and anesthetic risk of a second procedure, a factor that has stimulated patient compliance. Current modern techniques of breast reconstruction have greatly improved the final cosmetic result and thus patient acceptance. Cooperation between plastic surgeon and general surgeon has led to improved pre-operative markings and incision planning. This cooperation has helped to maintain medial breast skin whenever possible, thereby reducing medial scarring and making it increasingly easier to create unscarred visible cleavage. Similarly, correct planning is less likely to destroy the normal inframammary fold, a finding that has greatly improved the final cosmetic result.

Four methods are available today for immediate breast reconstruction. The method chosen is largely dictated by surgeon and patient preference and the amount of tissue available following the ablative operation.

- If the skin flaps left behind are thick enough, ample and viable, breast reconstruction may be easily achieved by the submuscular placement of an appropriately sized prosthesis. Nipple reconstruction and possibly a reconstructive procedure on the opposite breast to reduce any size discrepancies are evaluated after three months as a second procedure.
- If there is not enough skin available, though the existing flaps may be of adequate thickness, a two-stage procedure

using a tissue expander may be used. The tissue expander is inserted and the wound allowed to heal. The expander is then gradually inflated percutaneously, over a period of weeks or months, until its volume is greater than that of the prosthesis to be inserted during the second procedure. Much like the expansion of the abdomen during pregnancy, this slow distension of the chest wall skin will allow sufficient laxity or stretch of the skin to accommodate a prosthesis used to reconstruct the missing breast. A tissue expander has now been developed that, once inflated to the appropriate size, is simply left in position as a prosthesis, eliminating the necessity for a second procedure other than that required for reconstruction of the nipple.

- Rapidly gaining far greater acceptance and popularity is the use of the transverse rectus abdominis myocutaneous (TRAM) flap, using the skin below or around the umbilicus to replace the breast tissue removed. An added bonus is the abdominal lipectomy or so-called tummy-tuck procedure done at the same time. The plastic surgeon can elevate the flap at the same time that the general surgeon does the ablative procedure. With this technique, the overall duration of the operation is greatly reduced. The natural feel and more natural appearance have made this method the choice of many.

- When conditions such as previous abdominal scarring or other factors make this impossible, surgeons may opt to use the latissimus dorsi myocutaneous flap with a prosthesis.

In summary, immediate breast reconstruction is rapidly gaining greater acceptance, and current techniques, including the use of the TRAM flap, have improved the feel and look of the final result while not adversely affecting the ablative procedure or postoperative management of patients.

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Immediate Treatment of Superficial Burns

LOCAL COOLING limits edema and prevents progressive thrombosis of the dermal capillaries that normally occur during the first few hours following burn injury. This can only be used either for burns of less than 5% of the body surface area or for selected areas, such as the face or hands. Applying cold (not freezing) water by immersion or covering with wet towels for 30 minutes has been beneficial even when started half an hour after the injury.

Following cooling, the injured part should be gently washed with soap and water to remove external dirt and contamination. Hair in and around the burn wound is shaved to prevent its entrapment in wound secretions. Broken blisters and loose skin are debrided by scissors excision. At this point the depth of the wound is assessed. The typical characteristics of the superficial partial thickness wound can be found: pain, blanching and capillary refill of the moist pink wound surface. Deeper and larger injuries will frequently require surgical consultation or referral to a burn center, but most smaller superficial injuries can be treated in an emergency department or a physician's office.

Antibiotics are not routinely prescribed to a healthy patient. Topical antibacterial creams, which require frequent dressing changes and cause pain and discomfort, are not

needed for the care of a small burn treated on an outpatient basis. The superficial injury will heal on its own if protected. This is most easily done by covering the cleaned wound with a single layer of coated fine mesh gauze (such as Xeroform, Adaptic, Vaseline and the like). This is covered with enough bulky absorbent material to collect wound secretions and prevent their accumulating at the wound surface or leaking through the dressing. A firm outer wrap is then applied to immobilize the injured part and prevent external trauma.

The dressing should be changed by a physician at 48 hours. The adherent inner gauze layer is not removed unless there are excessive secretions or evidence of infection. The absorbent layer is reapplied and the wound reexamined in another four to five days when the dressing is again changed. As the wound heals by reepithelialization, the gauze layer will spontaneously separate. With this method, most superficial burn wounds will heal in 10 to 14 days with only three to four dressing changes and minimal patient discomfort and inconvenience. In the few cases of wounds that are not healed by two to three weeks or that show signs of increased depth or infection, treatment can be switched to topical antibacterials and the patient referred for consultation.

Immediate cooling of the burn wound, followed by cleansing and protective dressings with infrequent changes, has proved to be a safe, cost-effective method for the outpatient treatment of burns.

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Surgical Procedures for Down's Syndrome Stigmata

SIGNIFICANT INTEREST in the surgical correction of the facial stigmata of the Down's syndrome followed the report of Lemperle and Radu in 1980. The operation uses standard well-established plastic surgical techniques individually tailored to a patient's particular needs. The most useful procedure is the reduction of an excessively large tongue to permit comfortable oral closure and eliminate an unsightly open-mouth position. Other recommended procedures include Z-plasties to eliminate the medial canthal webs, nasal augmentation, lateral canthoplasty, malar and chin augmentation and sharpening of the cheek and submandibular contours by excising the subcutaneous fat.

The indications for this surgical correction, however, remain controversial. Critics note that severely mentally impaired persons seem unaware of their appearance and thus are not benefited by cosmetic improvement. They point out that even if the Down's syndrome characteristics are eliminated and a patient is made physically attractive in repose, behavior and facial animation betray the presence of retardation. Proponents suggest that some children are afforded limited social opportunities because of their family's embarrassment. Thus, eliminating the facial stigmata of the Down's syndrome should improve the patients' and their families' quality of life

by enhancing social interaction. Unfortunately, there are no well-done studies that support this impression. Also, many families grasp at any suggested treatment to leave no stone unturned for their loved one. In their zeal to do everything possible, parents may lose their objectivity and become easily persuaded to subject their child to an "Emperor's clothes" operation.

Operative intervention must be tailored to the entire sociopsychological milieu of the patient, the family and their interactional environment. The decision for surgical correction must be made by an informed and well-counseled family. Sometimes attempts at attitudinal change may be more traumatic than an operation. Such cases should be recognized by the treatment team who should not be judgmental and deny or discourage a surgical procedure because of their personal bias.

Simple reduction of a very large tongue can benefit even a profoundly retarded person, both by improving the airway and by eliminating a feature that can be a severe social impediment even in sheltered environments. For those few patients with the Down's syndrome who function at a relatively high intellectual level, the benefits of an operation are less controversial. Such patients will often have enough insight to make their decision, and usually actively solicit treatment.

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Face-lift Techniques Today

FOR THE BEST results, it is necessary to define the goal of an aesthetic facial operation. Most patients seeking such improvement of the entire face and neck wish to have their good looks restored, to appear as alert and youthful as possible or to improve features that have never been pleasing. Almost all patients would like the detectability of the scars minimized and the secondary problems, such as abnormal hair patterns following the surgical procedure, eliminated or minimized. The attainment of perfection is not possible; nevertheless, surgeons should use all of their diagnostic and surgical skills to try to reach this goal.

A precise anatomic diagnosis of the cause of facial problems is essential to plan the use of the structures to achieve maximum improvement. A detailed study of the contours and proportions of the forehead, cheeks, eyelids, eyebrows, lips, chin, neck and ears is necessary for planning the location of the incisions and the new position of the skin, subcutaneous tissue, fat and deep structures of the face. For example, if more than 2.5 cm of skin is to be discarded in the direction of the temporal hair, most patients will have a more pleasing appearance, without abnormal elevation of the hair, if the incision is placed to follow the hairline in the temporal area and to allow the hair in the sideburn area to be lower than the top of the ear. Creating a distance between the lateral canthus of the eyelids and the temporal hair of greater than 4 cm gives